

IN-SITU PRE-COATING OF PLASMA ETCH CHAMBER FOR IMPROVED PRODUCTIVITY AND CHAMBER CONDITION CONTROL

ABSTRACT OF THE DISCLOSURE

A method for providing substantially similar chamber condition before each wafer process operation in a semiconductor process chamber is provided. The method allows for prevention of transport of particle and metal contamination from chamber surfaces to the processed wafer. The method initiates with depositing a silicon containing layer over an inner surface of an empty semiconductor process chamber. Then, a wafer is introduced into the semiconductor process chamber after depositing the silicon containing layer. Next, a process operation is performed on the wafer. The process operation deposits a residue on the silicon containing layer. Next, an in-situ cleaning process is initiated upon completion of the processing operation and removal of the wafer. The process initiation includes flowing a fluorine containing gas into the semiconductor process chamber, and establishing a pressure within the semiconductor process chamber capable of allowing a plasma created from the fluorine containing gas to clear the silicon containing layer covering the inner surface of the processing chamber. A semiconductor processing chamber having a silicon containing pre-coat is also provided.